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Biofuel Mandates in the EU by Member State in 2017

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Approved By:
Emily Scott

Prepared By:
Sabine Lieberz

Report Highlights:
This report provides an overview on the biofuel use mandates in the various EU-28 member states. It supplements the EU-28 Biofuels Annual Report.

General Information:

This report was a group effort of the following FAS analysts:
Ornella Bettini of FAS/Rome covering Italy
Mila Boshnakova of FAS/Sofia covering Bulgaria
Monica Dobrescu of FAS/Bucharest covering Romania
Dimosthenis Faniadis of FAS/Rome covering Greece
Bob Flach of FAS/The Hague covering the Netherlands, Denmark, Sweden, and Finland
Gellert Golya of FAS/Budapest covering Hungary
Marta Guerrero of FAS/Madrid covering Spain and Portugal
Roswitha Krautgartner of FAS/Vienna covering Austria and Slovenia
Lucile Lefebvre of FAS/Paris covering France
Sabine Lieberz of FAS/Berlin covering Germany
Jana Mikulasova of FAS/Prague covering the Czech Republic and Slovakia
Andreja Misir of FAS Zagreb covering Croatia
Yvan Polet of USEU Brussels covering Belgium and Luxemburg
Piotr Rucinski of FAS/Warsaw covering Poland, Estonia, Latvia, and Lithuania
Jennifer Wilson of FAS/London covering the UK and Ireland

Introduction:

The 2009 EU Energy and Climate Change Package includes a 10% minimum target for renewable energy consumed by the transport sector to be achieved by all EU member states (MS) in their countries in 2020. Many MS have adopted minimum biofuel use mandates in order to achieve this goal. This report provides an overview about the current and future mandates of the various MS. The tables represent the status quo of law on April 29, 2016. If changes are being discussed but not yet adopted these are mentioned in the text below the tables.

In addition, the Renewable Energy Directive (RED) stipulates that biofuels can only be counted against EU and/or member state targets if they fulfill the following minimum greenhouse gas (GHG) reduction requirements:

	Minimum % GHG savings of each biofuel compared to the respective fossil fuel
2009-2016	35%
2017	50%
2018 and onwards	50% for biofuels produced in installations that started production prior to Jan 1, 2017. 60% for biofuels produced in installations that started production after Jan 1, 2017.

Source: RED Article 17 (2)
http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0028

Abbreviations and definitions used in this report

% Cal =	percent energy content
% Vol =	percent volume
% Biodiesel =	minimum percentage of biodiesel in total diesel use
% Bioethanol =	minimum percentage of bioethanol in total gasoline use
% Overall =	minimum percentage of biofuels in total fuel use

All of the above refer to fuel use in the transport sector

Biodiesel =	Fatty acid methyl ester produced from agricultural or waste feedstock (vegetable oils, animal fat, recycled cooking oils) used as transport fuel to substitute for petroleum diesel
Bioethanol =	Ethanol produced from agricultural feedstock used as transport fuel
CNG =	Compressed natural gas
Double counting =	Certain biofuels are counted twice against the mandates. Definition and eligible feedstocks vary by MS.
EC =	European Community or European Commission - depending on the context
ETBE =	Ethyl tert-butyl ether, an oxygenate gasoline additive containing 47% vol ethanol
EU =	European Union
FAME =	Fatty acid methyl ester
FQD =	EU Fuel Quality Directive 98/70/EC amended by directives 2009/30/EC and (EU) 2015/1513
GHG =	greenhouse gas
GJ =	Gigajoule = 1,000,000,000 Joule or 1 million KJ
HVO =	Hydrotreated Vegetable Oil
Ktoe =	1000 MT of oil equivalent = 41,868 GJ = 11.63 GWh
LPG =	Liquefied petroleum gas
MJ =	Megajoule
MS =	Member State(s) of the EU
Mtoe =	Million tons of oil equivalent
MWh =	Mega Watt hours = 1,000 Kilo Watt hours (KWh)
N/A =	Not applicable
RED =	EU Renewable Energy Directive 2009/28/EC
TME =	Biodiesel based on animal fats
Toe =	Tons of oil equivalent = 41,868 MJ = 11.63 MWh
TWh =	Tera Watt hours = 1 billion Kilo Watt hours (KWh)
UCO =	Used cooking oil/ recycled vegetable oil
UCOME =	UCO based methyl ester biodiesel
UK =	United Kingdom

Mandates by Member State:

In order to provide context, current, expired, and future mandates are listed. For easy reference, mandates applicable in 2017 are bolded.

Austria

	Overall Percentage (energy content, % cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting***
Since 2012	**5.75**	**6.3**	**3.4**	**yes**
2020	8.75			

Source: Fuels Order 2012

*Double counting: Waste materials and residual products from agricultural and forestry production including fisheries and aquaculture, residues from processing, cellulosic non-food materials or lingo-cellulosic materials.

Belgium

	Overall Percentage	**Biodiesel** (% vol)	**Bioethanol** (% vol)	**Double counting**
Until Dec 31, 2016		6.0	4.0	**Possible upon approval**
From January 1, 2017		**6.0**	**8.5**	

Source: Law of July 7, 2013; Law of July 21, 2017

Bulgaria

Biodiesel (% vol)		**Bioethanol** (% vol)		**Double counting**
Since June 1, 2012	**6**	September, 1, 2014	6	**No**
		March 1, 2015	**7**	
		January 1, 2018	8	
		January 1, 2019	9	
		January 1, 2020	10	

Croatia

	Overall Percentage (% cal)	**Biodiesel**	**Bioethanol**	**Double counting**
2014	3.18	2.83	0.35	**Second generation and waste based biofuels**
2015	3.88	3.04	0.84	
2016	4.89	3.94	0.90	
2017	**5.89**	**4.83**	**0.94**	
2018	6.92	5.75	0.97	
2019	7.85	6.61	0.98	
2020	8.81	7.49	1.00	

Source: Act on Biofuels for Transport (Official Gazette 65/09, 145/10, 26/11 and 144/12) http://narodne-novine.nn.hr/clanci/sluzbeni/2010_04_42_1066.html http://narodne-novine.nn.hr/clanci/sluzbeni/2010_11_125_3243.html)

Czech Republic

The Act on Air Protection was amended in 2016 and the amendment no. 369/2016 came into force as of January 1, 2017. Volume based mandates for biodiesel and for bioethanol remained the same at 6 and 4.1% respectively. The target to reach 10% share of biofuels and renewable electricity in transportation on total consumption by 2020 remains 10%. The obligation to reduce GHG emissions from fossil fuels was set at 2% to be achieved by December 31, 2014. The GHG reduction target increases to 3.5% (which is lower than the original target of 4%) by December 31, 2017, and to 6% by December 31, 2020.

	Share of biofuels and renewable electricity in transportation on total consumption (% cal)	**Obligation to reduce total GHG emissions by** (%)	**Biodiesel** (% vol)	**Bioethanol** (% vol)	**Double counting**
2014 - 2016		2	**6**	**4.1**	**No**
2017 – 2019		**3.5**			
2020	10.00	6			

Another amendment to the Act on Air Protection is currenly in the legislative process. If approved, it will introduce double counting in 2018 - 2020 and allow, along with biofuels, the use of LPG (liquefied petroleum gas), CNG (compressed natural gas) and electricity, when meeting the GHG emissions reduction goal.

Denmark

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
Since 2012	**5.75**			

Source: Stratas

Since January 2012, fuel companies are obliged to ensure that biofuels make up at least 5.75% of total annual sales of fuel. The companies are obliged to report meeting the 5.75% obligation to the Danish Energy Agency (DEA) annually. The DEA encourages them to use the voluntary certification schemes.

The Danish Biofuel Act is to be amended in order to enable mixes with 10% biofuels by 2020, subject to an analysis of alternative methods of meeting the renewable energy target for transport.

Finland

	Overall Percentage (% cal)	**Biodiesel**	**Bioethanol**	**Double counting**
2014	6			
2015	8			
2016	10			
2017	**12**			
2018	15			
2019	18			
2020 and onwards	20			

Source: Stratas

France

	Bioethanol (objective, % cal)	**Biodiesel** (objective, % cal)	**Double counting**
2010 to 2013	7	7	
2014 to 2016	7 of which up to 0.25% double-counted bioethanol	7.7 of which up to 0.35% double-counted biodiesel	**cellulosic biofuels and waste biofuels up to the maximum values stated on the left**
2017	**7.5 of which up to 0.3% double-counted bioethanol**	**7.7 of which up to 0.35% double-counted biodiesel**	

Since 2014, advanced biofuels have been doubled counted. The quantity of advanced biofuels that can be double counted is limited in order to favor biofuels produced in France (if it was not limited, this measure could lead to an increase in imports of advanced biofuels at the expense of domestic "conventional" biofuels).

Germany

	% Cal	**% GHG savings (BImSchG)***	**Double counting**
2009-2014	6.25 overall 4.4 biodiesel 2.8 bioethanol		2011-2014 HVO, UCOME only; TME excluded
2015-2016		3.5	**No**
2017-2019		**4.0**	
2020		6.0	

Source: $ 37a Federal Act on Protection against Air Pollution (Bundes-Immissionsschutzgesetz) http://www.gesetze-im-internet.de/bimschg/__37a.html

*Percentage of GHG savings of total fuel use (fossil and renewable) compared to the hypothetic GHG emissions had all the fuel been of fossil origin

Double counting expired at the end of 2014 with the transition to a GHG reduction mandate. Since then, hydrotreated vegetable oil and used cooking oil based biodiesel enjoy competitive advantages only based on their higher GHG reduction compared to first generation biofuels.

Greece

	Overall Percentage (% cal)	**Biodiesel**	**Bioethanol**	**Double counting**
2014-2019	**5.75**			**No**
2020	10			

In 2012, decision 4062 (FEK 70/A/30.3.2012) harmonized the Greek legislation with Directive 2009/28/EC. As a result, the increased mandate of 10% in 2020 can be met either by domestic production or imports (the lower mandate was only allowed to be filled with domestic production).

The estimated domestic supply of biomass from agriculture for 2015 and 2020 mainly refers to oil crops – sunflower, rapeseed, and soybean oil. To meet the 5.75% biofuels target around 148,000 MT of biodiesel have to be produced according to the Greek Ministry of Environment, Energy and Climate Change. These quantities require around 16,000 hectares, assuming that 9.2 tons of biodiesel are produced per hectare on average. In order to meet the energy targets for biofuels for transport - for 2015 and 2020 –a substantial reform of agricultural practices and possibly some imports will be needed.

Hungary

According to Hungary's National Renewable Energy Action Plan and EU requirements (RED), 10% of the transport fuel has to come from renewable sources such as biofuels by 2020. This obligation has come into force by the CXVII/2010 Act on promoting the use of renewable energy and the reduction of greenhouse gas emission of energy used in transport. By 2020, 56.8% (304 ktoe) of renewable energy sources used in transport has to be bioethanol and 37.8% (202 ktoe) has to be biodiesel in Hungary.

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2014-18		**4.9**	**4.9**	**Waste materials and residual products from agricultural and forestry production, including biofuels from non-food cellulosic and ligno-cellulosic materials**
2020		202 Ktoe	304 Ktoe	

Sources:
2014-15: Government Decree No. 343/2010 on requirements and certification of sustainable biofuel production
2020: Hungary's National Renewable Energy Action Plan
Double counting: §2 (4) of CXVII/2010 Act on promoting the use of renewable energy and the reduction of greenhouse gas emission of energy used in transport

Ireland

	Overall Percentage (% energy content)	**Double counting**
2010 - 2012	4.166	No
2013 - 2016	6.383	**Yes, UCO and Cat 1 Tallow**
2017 and onwards	**8.695**	

Italy

Year	**Overall biofuels** (% percentage by energy content)	**Of which advanced biofuels** (% by energy content, double counted)	**Advanced biofuels necessary for fulfilling the targets** (% by energy content)
2015	5	-	-
2016	5.5	**-**	**-**
2017	**6.5**	-	-
2018	7.5	1.2	0.6
2019	9	1.2	0.6
2020 + 2021	10	1.6	0.8
2022	10	2	1

Ministerial Decree of October 10, 2014

The Netherlands

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2014	5.5			**Yes**
2015	6.25			
2016	7.0			
2017	**7.75**			
2018	8.5			
2019	9.25			
2020	10.0			

Dutch Emission Authority

The physical volume of biofuels blended is lower than the mandate as a large percentage of the volume blended is double counting biodiesel. Of the total biofuel use in 2014, 60% was double counting fatty acid methyl ester (FAME), and 8% single counting FAME (the report with 2015 figures is not public yet). The feedstock share for the consumed biodiesel was as follows: animal fat (32%), UCO (49%), and glycerin (7%). Note: feedstock share for biodiesel produced in the Netherlands is not known and may be different.

Poland

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2014 - 2017	**7.1**			**yes**
2018	7.5			
2020	8.5			

FAS Warsaw

Portugal

Initially, in 2017 the overall mandate was 9%, with a bioethanol specific target pf 2.5% in terms of energy. Decree- Law 69/2016 retroactively eliminated the bioethanol specific target since 2016. Also, according to Law 42/2016 the overall consumption mandate for 2017 has been revised down, keeping it at 7.5%. The overall mandates for 2018 through 2020 remain unchanged.

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol/ ETBE** (% cal)	**Double counting**
2014	5.5	-	-	Yes
2015	7.5		2.5	
2016	7.5	-		
2017	**7.5**	**-**		
2018	9	-		
2019-2020	10	-		

Sources:
Consumption targets: Decree-Law 117/2010, Decree-Law 69/2016, and Law 42/2016.
Double counting: Decree-Law 117/2010 and Annex III in Implementing Order 8/2012. A comprehensive list updated on December 2016 can be found here.

Domestic non-food raw materials, used to receive 1.3 TdB (Biofuel Entitlements) per Toe produced. Each Toe of biofuel produced out of domestic agricultural raw materials was granted with 1.1 TdB. However this additional value for domestic raw materials is just valid at the domestic level and could not be reported to the EC as part of the mandate compliance. It was only in 2016 when TdBs were issued for the first and last time to biofuel produced out of domestic raw materials, as this special treatment was revoked by Decree-Law 69/2016.

Romania

	Overall Percentage (% cal)*	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2014 - 2015	**N/A**	5.0	4.5	**N/A**
2016 - 2017		**6.5**	**4.5**	
2018- 2019		6.5	8.0	
2020	10	6.5	8.0	

Slovak Republic

	Overall Per-centage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**ETBE**		**Double Counting**
				Total ETBE	Thereof bioethanol component	
2015	5.5	6.8	4.5	3%	1.41%	No
2016	5.5	6.9	4.6			
2017	**5.8**	**6.9**	**4.7**			
2018	7.2	9.7	5.9			
2019	7.5	10.1	6.2			
2020	8.5	11.5	7.0			

Source**:** Act no. 309/2009 on Support of Renewable Energy Resources

Slovak legislation covering the mandates was updated in 2015: the minimum blending percentage for biodiesel was lowered to 6.9%, for 2016 and 2017, as a result of the revised EU fuel quality directive (FQD) that sets 7% as maximum FAME content for diesel fuels to be placed on the market without labelling.

Slovakia is preparing another amendment to the Act no. 309/2009 on Support of Renewable Energy Sources. The amendment will transpose the European Directive 2015/1513 of September 9, 2015, which amends the EU FQD Directive 98/70/EC of October 13, 1998. The amendment will update blending mandates for the current biofuels and introduce mandates for the advanced biofuels, as well as targets for 2020 – 2030. The new amendment is expected to come into force on August 1, 2017.

Slovenia

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2010	5			**yes**
2011	5.5			
2012	6			
2013	6.5			
2014	7			
Since 2015	**7.5**			

Source: Stratas

Spain

	Overall Percentage (% cal)	**Biodiesel** (% cal)	**Bioethanol** (% cal)	**Double counting**
2013-2015	4.1	4.1	3.9	**N/A**
2016	4.3	-	-	
2017	**5**	**-**	**-**	
2018	6	-	-	
2019	7	-	-	
2020	8.5	-	-	

Consumption mandates followed a steady upward trend until 2013, when, the downward revision of mandates introduced by Royal Decree-Law 4/2013 reduced Spain's biofuels market size. Until 2016, the overall mandate could be fulfilled by either biofuel.

On April 16th, 2014, the Government of Spain published the list of raw material eligible for double counting against biofuels consumption mandates in the Official Gazette. This list includes Used Oils of animal or vegetal origin, animal fats (Categories 1 and 2 of Regulation (EC) 1069/2009). However, double counting will only enter into force after more detailed guidelines are issued, presumably not earlier than 2016, once sustainability is fully in place.

Royal Decree 1085/2015 removed specific targets and only tepidly increased the consumption targets for the 2016-2020 period. Interestingly, only the consumption target proposed for 2019 will be higher than the original mandate established back in 2012, prior to the downward revision of targets carried out in 2013.

The enforcement of the double counting provision would contribute to further reducing the market for biofuels made from conventional feedstock. This potential market reduction will mainly affect the biodiesel sector, as no bioethanol raw material has been granted double counting.

However, the double counting is yet to be fully enforced and, most likely, not until sustainability verification is being carried out. In the current scenario, Spanish biodiesel that qualifies for double

counting is being exported to neighboring EU member states where the double credit is already in place.

Sweden

In Sweden, biofuels policy is based on tax exemptions. Based on this policy, Sweden succeeded in realizing the 10% blending of biofuels in the transport sector. However, in 2016, the government has decided to impose a tax on E-85 which until then had been set at zero. It is expected that this will favor gasoline use at the expense of E-85.

United Kingdom

	Overall Percentage (% vol)	**Double Counting**
2008-2009	2.50	
2009-2010	3.25	
2010-2011	3.50	
2011-2012	4.00	**Approved waste and residue feedstocks**
2012-2013	4.50	
Since 2013	**4.75**	
Proposed 2017 - 2018	*6.00*	
Proposed 2018 – 2019	*7.25*	
Proposed 2019 – 2020	*8.50*	
Proposed 2020 – 2030	*9.75*	

Note: All periods are April to April with slightly varying beginning and end dates.

Related reports:

Biofuel Mandates in the EU by Member State - 2016|Biofuels Trade Policy Monitoring|Berlin|EU-28|6/29/2016

This report provides an overview on the biofuel use mandates in the various EU-28 member states. It supplements the EU-28 Biofuel Annual Report.
Biofuel Mandates in the EU by Member State - 2016_Berlin_EU-28_6-22-2016